

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Boardman et al.	:
	:
Serial No.: 10/661,847	:
	:
Filed: September 12, 2003	:
	:
For: MODULAR REACTOR	:
CONTAINMENT SYSTEM	:

Art Unit: 3694  
Examiner: D. L. Greene

**PETITION FOR WITHDRAWAL OF HOLDING OF ABANDONMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313

Applicants respectfully submit that the Notice Of Abandonment mailed November 6, 2006 is improper and request that the holding of abandonment be withdrawn. The Notice of Abandonment indicates that Applicants failed to timely file a proper response to the Office Action dated April 27, 2006.

Applicants respectfully submit that an RCE was filed on October 27, 2006, along with an accompanying Amendment After Final Office Action and a request for a three month extension of time. A copy of the return postcard stamped by the Patent and Trademark Office as being received on October 27, 2006 indicating that Applicants have timely responded to the April 27, 2006 Office Action is included herewith. Also, a printout of the Public PAIR Image File History for the above identified application showing that Applicants' response to the April 27, 2006 Office Action was received and posted to the official file history of the application is also included herewith.

Further, a copy of Applicants' response sent "Express Mail Post Office to Addressee" on October 27, 2006 is included herewith for your convenience.

For the reasons set forth above, Applicants respectfully request that the holding of abandonment be withdrawn. Favorable action is respectfully solicited.

Respectfully submitted,

A handwritten signature in black ink, reading "Michael Tersillo", written over a horizontal line.

Michael Tersillo  
Registration No. 42,180  
ARMSTRONG TEASDALE LLP  
One Metropolitan Square, Suite 2600  
St. Louis, Missouri 63102-2740  
(314) 621-5070

# BEST AVAILABLE COPY



THE UNITED STATES PATENT OFFICE IS REQUESTED TO IMPRESS ITS STAMP ON THIS CARD AND PLACE SAME IN THE OUTGOING MAIL TO SHOW THE FOLLOWING PAPERS HAVE BEEN RECEIVED.

Atty Dkt. No.: 24-AT-135243 (12551-227)

Application of: Boardman et al.

Serial No. 10/661,847

Filed: September 12, 2003

Art Unit: 3663

Examiner: Daniel Lawson Greene Jr.,

For: MODULAR REACTOR CONTAINMENT SYSTEM

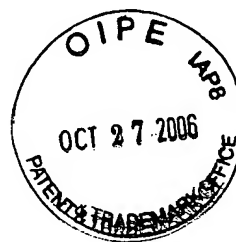
Enclosed:

Request For Continued Examination (RCE) Transmittal (1 pg.), in duplicate  
Amendment After Final Office Action (23 pgs.), in response to Office Action dated 4/27/06,  
and made final  
Transmittal Form (3 pgs.), in duplicate  
Two (2) Sheets of Replacement Drawings

MT/ls

Mailed: October 27, 2006

Express Mail No. EV829958339US



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Boardman et al.

Serial No.: 10/661,847

Filed: September 12, 2003

For: MODULAR REACTOR  
CONTAINMENT SYSTEM

Art Unit: 3663

Examiner: D. L. Greene

Mail Stop: RCE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

## TRANSMITTAL

- Transmitted herewith is:  
Amendment After Final Office Action (23 pgs.), in response to Office Action dated April 27, 2006, and made final  
Transmittal Form (3 pgs.), in duplicate  
Request For Continued Examination (RCE) Transmittal, (1 pg.), in duplicate  
Two (2) Sheets of Replacement Drawings  
Return Post Card

## STATUS

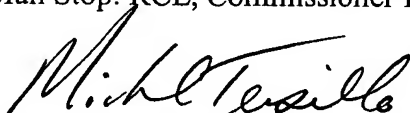
- Applicant  
☐ Claims small entity status.  
☒ is other than a small entity.

CERTIFICATE OF MAILING BY EXPRESS MAIL TO  
THE COMMISSIONER FOR PATENTS

Express Mail No. EV829958339US

Date: October 27, 2006

I hereby certify that the documents listed above are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated above in an envelope addressed to Mail Stop: RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

  
Michael Tersillo, Reg. No. 42,180

### EXTENSION OF TERM

3. The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136 apply.

(complete (a) or (b), as applicable)

- (a)   X   Applicant petitions for an extension of time under 37 C.F.R. 1.136  
(Fees: 37 C.F.R. 1.17(a)-(d) for the total number of months checked below:)

Extension for response within:	Other than small entity Fee	Small entity Fee (if applicable)
<u>      </u> first month	\$ 120.00	\$ 60.00
<u>      </u> second month	\$ 450.00	\$ 225.00
<u>  X  </u> third month	\$ 1,020.00	\$ 510.00
<u>      </u> fourth month	\$1,590.00	\$ 795.00
<u>      </u> fifth month	\$2,160.00	\$1,080.00

Fee:           \$1,020.00          

If an additional extension of time is required, please consider this a petition therefor.

*(Check and complete the next item, if applicable)*

— An extension of        months has already been secured. The fee paid therefor \$        is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request \$       

OR

- (b)        Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

## FEE FOR CLAIMS

4. The fee for claims (37 C.F.R. 1.16(b)-(d)) has been calculated as shown below:

	(Col. 1)		(Col. 2)	(Col. 3)	SMALL ENTITY		OTHER THAN SMALL ENTITY
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR	PRESENT EXTRA	ADDITIONAL RATE FEE	OR	ADDITIONAL RATE FEE
TOTAL		MINUS		=	x \$25.00 = \$		x \$50.00 = \$
INDEP.		MINUS		=	x \$100.00 = \$		x \$200.00 = \$
— FIRST PRESENTATION OF MULTIPLE DEP. CLAIM					+ \$180.00 = \$		+ \$360.00 = \$
					TOTAL ADDITIONAL FEE \$	OR	TOTAL ADDITIONAL FEE \$

- (a) ☒ No additional fee for Claims is required

OR

- (b) ☐ Total additional fee for claims required \$ \_\_\_\_\_

## FEE PAYMENT

5. Attached is a check in the sum of \$ \_\_\_\_\_
- ☒ Charge Deposit Account No. 01-2384 the sum of **\$1,020.00**.  
A duplicate of this transmittal is attached.

## FEE DEFICIENCY

6. ☒ If any additional extension and/or fee is required, charge Deposit Account No. 01-2384.

AND/OR

- ☒ If any additional fee for claims is required, charge Deposit Account No. 01-2384.
7. ☐ Other:



Michael Tersillo  
Reg. No. 42,180  
ARMSTRONG TEASDALE LLP  
One Metropolitan Square, Suite 2600  
St. Louis, MO 63102  
314-621-5070

# Request for Continued Examination (RCE) Transmittal

Address to:  
Mail Stop RCE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Application Number	10/661,847
Filing Date	September 12, 2003
First Named Inventor	Boardman et al.
Art Unit	3663
Examiner Name	D. L. Greene
Attorney Docket Number	24-AT-135243

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.

Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

- Submission required under 37 CFR 1.114** Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).
  - ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
    - ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on \_\_\_\_\_
    - ☐ Other \_\_\_\_\_
  - ☒ Enclosed
    - ☒ Amendment/Reply
    - ☐ Affidavit(s)/ Declaration(s)
    - ☐ Information Disclosure Statement (IDS)
    - ☒ Other Amendment Transmittal and  
Two (2) Sheets of Replacement Drawings
- Miscellaneous**
  - ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of \_\_\_\_\_ months. (Period of suspension shall not exceed 3 months: Fee under 37 CFR 1.17(i) required)
  - ☒ Other Express Mail Certificate and Return Post Card
- Fees** The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed. The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. 01-2384. I have enclosed a duplicate copy of this sheet.
  - ☒ RCE fee required under 37 CFR 1.17(e) **\$790** The Commissioner is hereby authorized to charge payment of the total fees due, any deficiencies, or credit any overpayment to Deposit Account 01-2384.
  - ☒ Extension of time fee (37 CFR 1.136 and 1.17) **\$1,020**
  - ☐ Other \_\_\_\_\_
  - ☐ Check in the amount of \$ \_\_\_\_\_ enclosed
  - ☐ Payment by credit card (Form PTO-2038 enclosed)

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature	<i>Michael Tersillo</i>	Date	October 27, 2006
Name (Print/Type)	Michael Tersillo	Registration No.	42,180

## CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Signature		Date	
Name (Print/Type)			

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



24-AT-135243  
PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Boardman et al.

:

Art Unit: 3663

Serial No.: 10/661,847

:

Examiner: D. L. Greene

Filed: September 12, 2003

:

:

For: MODULAR REACTOR  
CONTAINMENT SYSTEM

:

:

**AMENDMENT AFTER FINAL OFFICE ACTION**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313

In response to the Office Action dated April 27, 2006, and made final, please amend the  
above-identified patent application as follows.



IN THE SPECIFICATION

Please replace paragraph [0026] with the following replacement paragraph [0026].

[0026] Core support plates 100 are individually located, supported, and fixed in position by grooves 122, 124, 126 and 128 in bottom surface 104 which receive corresponding core support beams 150. In one embodiment, core support beams 150 have mating grooves or protrusions 164 (best shown in Figure 8) machined into the core support beams 150 after the core support beam structure has been welded together and heat treated. ~~Protrusions 164~~ The protrusions extend along a length of a core support beam 150 and are receivable within matching grooves 122, 124, 126, and 128 of core support plate 100. Opening 142 of intersection portion 140 allows intersecting core support beams 150 disposed in grooves 120 to extend beyond core support plate 100. The interlocking of grooves 120 and core support beams 150 provide accurate and secure lateral spacing of core support plates 100 within support ring 152. Figure 5 illustrates at least one removable core support plate 100 and a plurality of core support beams 150 (shown in Figure 4) forming a core support 166 for core 22 of reactor 5.

IN THE CLAIMS

Please cancel Claim 5.

1. (currently amended) ~~An~~ A nuclear reactor core support apparatus for supporting fuel assemblies in a reactor pressure vessel including a core, said apparatus comprising:

a reactor core shroud;

a plurality of support beams coupled to said reactor core shroud; and

a plurality of removable support plates disposed on said plurality of support beams, each said removable support plate comprising a top surface and an opposing bottom surface, and at least one groove in said bottom surface, each said groove sized to engage one of said support beams where at least a portion of said beam is positioned in said groove, said removable support plate in direct contact with said beam.

2. (previously presented) The apparatus according to Claim 1 wherein said plurality of support plates and said plurality of support beams form a core support.

3. (currently amended) The apparatus according to Claim 1 further comprising a support ring having an inner periphery and an outer periphery, said support ring attached to said core shroud, said plurality of support beams extending between said inner periphery, said plurality of support beams intersecting one another to form a support beam matrix.

4. (currently amended) The apparatus according to Claim 1 wherein each said removable support plate is removable from above said reactor core support apparatus.

5. (canceled)

6. (previously presented) The apparatus of Claim 1 wherein each said removable support plate comprising at least one support plate flow passage.

7. (previously presented) The apparatus according to Claim 6 wherein each said removable support plate comprising at least one removable support block disposed thereon, said removable support block having at least one support block flow passage in flow communication with one of said at least one support plate flow passage.

8. (previously presented) The apparatus according to Claim 7 wherein said removable support block comprising at least one flow inlet portion extending from one side of said removable support block, said at least one flow inlet portion providing flow communication to one of said at least one support block flow passage, said at least one flow inlet portion receivable within one of said at least one support plate flow passage.

9. (canceled).

10. (previously presented) The apparatus according to Claim 1 wherein each said support plate further comprises a guide tube opening, said guide tube opening comprising at least one cruciform shaped slot, said support plate further comprising a first groove, a second groove, a third groove and a fourth groove, said first, second, third and fourth grooves located in said bottom surface of said support plate and positioned around said guide tube opening.

11. (previously presented) The apparatus according to Claim 10 wherein at least two of said first groove, second groove, third groove and fourth groove extend along said bottom surface substantially parallel to each other, and

wherein one end of at least one of said first groove, second groove, third groove and fourth groove intersects with one end of at least one of said first groove, second groove, third groove and fourth groove.

12. (canceled).

13. (currently amended) A nuclear reactor comprising:  
a reactor pressure vessel;  
a reactor core located inside said reactor pressure vessel;  
a core shroud surrounding said core; and  
a core plate located inside said reactor pressure vessel, said core plate comprising:  
a plurality of support beams coupled to said core shroud; and  
a plurality of removable support plates disposed on said plurality of support beams, each  
said removable support plate comprising a top surface and an opposing bottom surface, and at  
least one groove in said bottom surface, each said groove sized to engage one of said support  
beams where at least a portion of said beam is positioned in said groove, said removable support  
plate in direct contact with said beam.

14. (cancelled)

15. (previously presented) The nuclear reactor according to Claim 13 wherein each said  
removable support plate comprises at least one support plate flow passage.

16. (previously presented) The nuclear reactor according to Claim 15 wherein each said  
removable support plate comprises at least one removable support block disposed thereon, said at  
least one removable support block comprising at least one support block flow passage in flow  
communication with one of said at least one support plate flow passage.

17. (previously presented) The nuclear reactor according to Claim 16 wherein said at  
least one removable support block comprises at least one inlet flow projection extending from  
one side of said at least one removable support block and at least one flow outlet positioned on

an opposite side of said at least one removable support block, said at least one inlet flow projection receivable within one of said at least one support plate flow passage.

18. (previously presented) The nuclear reactor according to Claim 17 wherein said at least one removable support block comprises at least one internal flow passage providing flow communication between one of said at least one inlet flow projection and one of said at least one flow outlet.

19. (previously presented) The nuclear reactor according to Claim 18 wherein each said internal flow passage comprises a first channel and a second channel, said first and second channels located within said at least one removable support block.

20. (original) The nuclear reactor according to Claim 19 wherein said first channel has a first flow outlet and said second channel has a second flow outlet.

Remarks

The Office Action dated April 27, 2006, and made final, has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-4, 6-8, 10-11, 13, and 15-20 are pending in this application. Claims 1-8, 10-11, 13, and 15-20 stand rejected. Claim 5 has been cancelled.

In accordance with 37 C.F.R. 1.136(a), a three month extension of time is submitted herewith to extend the due date of the response to the Office Action dated April 27, 2006, for the above-identified patent application from July 27, 2006, through and including October 27, 2006. In accordance with 37 C.F.R. 1.17(a), authorization to charge a deposit account in the amount of \$1020.00 to cover this extension of time request also is submitted herewith.

The objection to the drawings under 37 CFR 1.48(p)(4) is respectfully traversed.

An amended Figure 4 deleting reference number 164 is submitted herewith for approval. Applicants submit that the drawings meet the requirements of 37 CFR 1.48(p)(4). Accordingly, Applicants respectfully request that the objection to the drawings under 37 CFR .48(p)(4) be withdrawn.

The objection to the drawings under 37 CFR 1.83(a) is respectfully traversed.

Applicants submit herewith an amended Figure 8, for approval. Figure 8 is a sectional view of originally filed Figure 4 that illustrates support beam 150 received in groove 122 of support plate 100. Support for this amendment is found in paragraph [0026] and originally filed Claim 1. No new matter has been added.

Further, Claims 1 and 13 have been amended to recite "at least one groove in said bottom surface, each said groove sized to engage one of said support beams where a portion of said

beam is positioned in said groove, said removable support plate in direct contact with said beam". Amended Figure 8 clearly illustrates the support beam 150 positioned in the groove 122 and that the support beam 150 and the support plate 100 are in direct contact.

For the reasons set forth above, Applicants respectfully request that the objection to the drawings under 37 CFR 1.83(a) be withdrawn.

The objection to the specification under 35 U.S.C. 132(a) is respectfully traversed.

Applicants have amended paragraph [0026] and Figure 4 to delete reference number 164. Also, Figure 8 has been amended to remove the protrusion from the beam and reference number 164. Applicants submit that Figure 8 is a sectional view of originally filed Figure 4 that illustrates support beam 150 received in groove 122 of support plate 100. Support for this Figure is found in originally filed paragraph [0026] and originally filed Claim 1. No new matter has been added. Further, Applicants submit that Figure 8 is a schematic illustration that shows the relationship of the elements of the core support apparatus. Figure 8 is not a construction drawing meant to show exact sizes of the beam, the support plate, and the groove.

For the reasons set forth above, Applicants respectfully request that the objection to the specification under 35 U.S.C. 132(a) be withdrawn.

The rejection of Claim 5 under 35 U.S.C. § 112, first paragraph, is respectfully traversed.

Claim 5 has been canceled.

For the reasons set forth above, Applicants respectfully request that the Section 112, first paragraph, rejection of Claim 5 be withdrawn.

The rejection of Claims 1-8, 10, 11, 13, and 15-20 under 35 U.S.C. § 112, first paragraph, is respectfully traversed.

Applicants respectfully submit that the subject matter in the claims is described in the specification to enable one skilled in the art to make and use the invention. Figure 2 has been previously amended to better show opening 142 which permits the grooves in the support plates to receive the support beams. Also, Applicants submit that one skilled in the art would know how thick the support plates would need to be to function in a nuclear reactor and to support the fuel assemblies. Further, Applicants submit that the specification does describe that the support beams are received in the grooves of the support plates (see paragraph [0026], first sentence).

Also, Applicants disagree with the assertion at page 3 of the Office Action that "there is NO WAY the invention could function as claimed . . . . It does NOT appear that two immediately adjacent/adjoining plates would be able to cover the SAME intersection of support beams because said extension (140) is covering said intersection of said beams and would appear to interfere with the same extension from said immediately adjacent/adjoining plates."

Applicants submit that the Figures are schematic illustrations that show the relationship of the elements of the core support apparatus. The Figures are not construction drawings meant to show exact sizes of the beams, the support plates (including the extension), and the grooves. Applicants submit that one skilled in the art reading the specification along with the drawings would be capable of making and using the claimed invention without undue experimentation. Also, one skilled in the art would know how to make any dimension changes (in the schematic Figures) that are needed to the plates and the beams that are needed to accommodate the size of the nuclear reactor pressure vessel.

Further, the Federal Circuit has held that "Patent documents are written for persons familiar with the relevant field; the patentee is not required to include in the specification



information readily understood by practitioners, lest every patent be required to be written as a comprehensive tutorial and treatise for the generalist, instead of a concise statement for persons in the field." *Verve LLC v. Crane Cams Inc.*, 65 USPQ2d 1051, 1053-1054 (Fed Cir. 2002).

Claim 5 has been canceled.

For the reasons set forth above, Applicants respectfully request that the Section 112, first paragraph, rejection of Claims 1-8, 10, 11, 13, and 15-20 be withdrawn.

The rejection of Claims 1-8, 10, 11, 13, and 15-20 under 35 U.S.C. § 112, second paragraph, is respectfully traversed.

Claims 1 and 13 have been amended to recite "a plurality of removable support plates disposed on said plurality of support beams, each said removable support plate comprising a top surface and an opposing bottom surface, and at least one groove in said bottom surface, each said groove sized to engage one of said support beams where a portion of said beam is positioned in said groove, said removable support plate in direct contact with said beam". Applicants submit that Claims 1 and 13 are definite and particularly point out and distinctly claims the subject matter that applicants regard as their invention. Applicants further submit that one skilled in the art reading Claims 1 and/or 13 in conjunction with the specification, including the drawings would understand the metes and bounds of the invention. One skilled in the art would understand what is meant by "each said groove sized to engage one of said support beams where a portion of said beam is positioned in said groove". One skilled in the art would know that if the beam width is wide, the groove has to be at least as wide as the beam to engage the beam with a portion of the beam positioned in the beam.

Applicants submit that the claims have been amended to provide proper antecedent basis for all terms in the claims.

Claim 5 has been canceled.

For the reasons set forth above, Applicants respectfully request that the Section 112, second paragraph, rejection of Claims 1-8, 10, 11, 13, and 15-20 be withdrawn.

The rejection of Claims 1-6 and 13 and 15 under 35 U.S.C. § 102(b) as being anticipated by Anthony (U.S. Patent No. 4,127,445) is respectfully traversed.

Anthony describes a lower core support structure (18) for a nuclear reactor (10). The support structure includes a plurality of support beams (19 and 21) forming a grid network of support beams. Metal pads (22) and alignment pins (23) are welded to the upper surface of the support beams. Fuel assemblies (16) are supported and aligned by the pads and pins. A portion of the fuel assemblies, namely a lower end fitting (38) rests on the pads. Specifically, alignment posts (60) extend downward from a lower end plate (54), and a bottom surface of the alignment posts rest on the top surface of the pads. Notably, Anthony does not describe nor suggest at least one groove in the bottom surface of the lower end plate (54) of the fuel assembly.

Claim 1 of the present application recites "[a] nuclear reactor core support apparatus for supporting fuel assemblies in a reactor pressure vessel including a core, said apparatus comprising: a reactor core shroud; a plurality of support beams coupled to said reactor core shroud; and a plurality of removable support plates disposed on said plurality of support beams, each said removable support plate comprising a top surface and an opposing bottom surface, and at least one groove in said bottom surface, each said groove sized to engage one of said support

beams where a portion of said beam is positioned in said groove, said removable support plate in direct contact with said beam."

Anthony does not describe nor suggest a nuclear reactor core support apparatus for supporting fuel assemblies in a reactor pressure vessel as recited in Claim 1. Particularly, Anthony does not describe nor suggest an apparatus having a removable support plate including at least one groove in the bottom surface, with each groove sized to engage one of the support beams where a portion of the beam is positioned in the groove and the removable support plate in direct contact with the beam. Rather, Anthony describes a support structure having a plurality of support beams, metal pads, and alignment pins, where the fuel assemblies are supported and aligned by the pads and pins. Anthony does not describe a removable support plate. The Office Action, at page 21, suggests that the lower end plate (54) of the fuel assembly (16) is the removable support plate of a nuclear reactor core support apparatus which has a stated purpose of supporting the fuel assembly. Applicants submit that the lower end plate (54) cannot be an integral element of the fuel assembly (16) and also an integral element of a separate nuclear reactor core support apparatus at the same time. Further, alignment posts extend downward from the lower end plate of the fuel assemblies and a bottom surface of the alignment posts rest on a top surface of the pads.

Also, Anthony does not describe nor suggest a support plate groove in the bottom surface of a support plate sized to engage one of the support beams where a portion of the beam is positioned in the groove and the removable support plate is in direct contact with the beam. In fact, the fuel assemblies described in Anthony do not even contact the support beams. Rather, and in contrast to the present invention, the fuel assemblies rest upon the metal pads.

Additionally, Applicants respectfully traverse the suggestion in the Office Action, dated 12/23/04, at page 8, that Anthony describes a removable support plate including at least one groove configured to mate with a support beam. Specifically, the Office Action recites "each said removable plate (54) comprising at least one groove (4 grooves labeled (62)) configured to mate with one of said plurality of support beams (via beam/protrusion combination 19, 21, 22, and 23)." Applicants respectfully submit that the depressions (62) described in Anthony are NOT grooves in the lower surface of the support plate. Rather the depressions are part of the alignment posts that extend from the side of the support plate (54). Also, each cylindrical depression does not receive a portion of the support beam, but rather, receives and engages an upwardly extending alignment pin (23). *See Col. 4, lines 34-37*. Notably, Anthony does not describe or suggest that the cylindrical depressions engage the support beams with the removable support plate in direct contact with the beam. In fact the Office Action, at page 14 admits that in Anthony, "the support plates are indirectly mating with the support beams". Accordingly, for the reasons set forth above, Applicants submit that Claim 1 is patentable over Anthony.

Claim 5 has been canceled.

Claims 2-4 and 6 depend from independent Claim 1. When the recitations of Claims 2-4 and 6 are considered in combination with the recitations of Claim 1, Applicants respectfully submit that dependent Claims 2-4 and 6 likewise are patentable over Anthony.

Claim 13 of the present application recites "[a] nuclear reactor comprising: a reactor pressure vessel; a reactor core located inside said reactor pressure vessel; a core shroud surrounding said core; and a core plate located inside said reactor pressure vessel, said core plate comprising: a plurality of support beams coupled to said core shroud; and a plurality of

removable support plates disposed on said plurality of support beams, each said removable support plate comprising a top surface and an opposing bottom surface, and at least one groove in said bottom surface, each said groove sized to engage one of said support beams where a portion of said beam is positioned in said groove, said removable support plate in direct contact with said beam."

Anthony does not describe nor suggest a nuclear reactor as recited in Claim 13. More specifically, and as explained above, Anthony does not describe nor suggest a nuclear reactor having a removable support plate including at least one groove in the bottom surface, with each groove sized to engage one of the support beams where a portion of the beam is positioned in the groove and removable support plate in direct contact with said beam. Rather, Anthony describes a support structure having a plurality of support beams, metal pads, and alignment pins, where the fuel assemblies are supported and aligned by the pads and pins. Additionally, Applicants respectfully traverse the suggestion in the Office Action, dated 12/23/04, at page 8, that Anthony describes a removable support plate including at least one groove configured to mate with a support beam. Specifically, the Office Action recites "each said removable plate (54) comprising at least one groove (4 grooves labeled (62)) configured to mate with one of said plurality of support beams (via beam/protrusion combination 19, 21, 22, and 23)." Applicants respectfully submit that the depressions (62) described in Anthony are NOT grooves in the lower surface of the support plate. Rather the depressions are part of the alignment posts that extend from the side of the support plate (54). Also, each cylindrical depression does not receive a portion of the support beam, but rather, receives and engages an upwardly extending alignment pin (23). *See Col. 4, lines 34-37.* Notably, Anthony does not describe or suggest that the cylindrical

depressions engage the support beams with the removable support plate in direct contact with the beam. In fact the Office Action, at page 14 admits that in Anthony, "the support plates are indirectly mating with the support beams". Accordingly, for the reasons set forth above, Applicants submit that Claim 13 is patentable over Anthony.

Claim 15 depends from independent Claim 13. When the recitations of Claim 15 are considered in combination with the recitations of Claim 13, Applicants respectfully submit that dependent Claim 15 likewise is patentable over Anthony.

For the reasons set forth above, Applicants respectfully request that the Section 102(b) rejection of Claims 1-6 and 13 and 15 be withdrawn.

The rejection of Claims 1-6 under 35 U.S.C. § 102(b) as being anticipated by Rinderer (U.S. Patent No. 5,782,439) is respectfully traversed.

Rinderer describes a support system for transmission lines that includes a plurality of rail sections attached to the top surface of a hub. Rinderer does not describe nor suggest any type of apparatus that can be used in a nuclear reactor core.

Rinderer does not describe nor suggest a nuclear reactor core support apparatus for supporting fuel assemblies in a reactor pressure vessel as recited in Claim 1. Particularly, Rinderer does not describe nor suggest an apparatus having a reactor core shroud, a plurality of support beams coupled to the reactor core shroud, and a removable support plate including at least one groove in the bottom surface, with each groove sized to engage one of the support beams where a portion of the beam is positioned in the groove and the removable support plate is in direct contact with the beam. Rather Rinderer describes a support system for transmission lines that includes a plurality of rail sections attached to the top surface of a hub member. The

hub 50 does not include a plurality of grooves on its bottom surface that are sized to engage one of the support beams where at least a portion of the beam is positioned in the groove. Rather, the rails 14 are attached to the upper side of the hub. Particularly, the rails 14 are attached to the upper surface of a flange 64 that extends around the perimeter of the hub. Also, Rinderer does not describe support beams coupled to a reactor core shroud. Accordingly, Applicants submit that Claim 1 is patentable over Rinderer.

Claim 5 has been canceled.

Claims 2-4 and 6 depend from independent Claim 1. When the recitations of Claims 2-4 and 6 are considered in combination with the recitations of Claim 1, Applicants respectfully submit that dependent Claims 2-4 and 6 likewise are patentable over Rinderer.

For the reasons set forth above, Applicants respectfully request that the Section 102(b) rejection of Claims 1-6 be withdrawn.

The rejection of Claims 1-5 under 35 U.S.C. § 102(b) as being anticipated by Bettinger (U.S. Patent No. 3,811,237) is respectfully traversed.

Bettinger describes a raised floor panel and assembly for computer and similar installations. The panels are supported above a subfloor on pedestals. Bettinger does not describe nor suggest any type of apparatus that can be used in a nuclear reactor core.

Bettinger does not describe nor suggest a nuclear reactor core support apparatus for supporting fuel assemblies in a reactor pressure vessel as recited in Claim 1. Particularly, Bettinger does not describe nor suggest an apparatus having a reactor core shroud, a plurality of support beams coupled to the reactor core shroud, and a removable support plate including at least one groove in the bottom surface, with each groove sized to engage one of the support

beams where a portion of the beam is positioned in the groove and the removable support plate is in direct contact with the beam. Rather, Bettinger describes a floor system for a computer room. Accordingly, Applicants submit that Claim 1 is patentable over Bettinger.

Claim 5 has been canceled.

Claims 2-4 depend from independent Claim 1. When the recitations of Claims 2-4 are considered in combination with the recitations of Claim 1, Applicants respectfully submit that dependent Claims 2-4 likewise are patentable over Rinderer.

For the reasons set forth above, Applicants respectfully request that the Section 102(b) rejection of Claims 1-5 be withdrawn.

The rejection of Claims 1-8, 10, 11, 13 and 15-18 under 35 U.S.C. § 103(a) as being unpatentable over Challberg (U.S. Patent No. 6,813,327) in view of Sodergard (U.S. Patent No. 3,650,895) and further in view of Naka et al. (U.S. Patent No. 4,922,670) is respectfully traversed.

Challberg describes a nuclear reactor core plate assembly that includes a plurality of support beams, a flat plate positioned on top of the support beams and a plurality of fuel supports positioned on top of the flat plate and extending through the flat plate. Challberg does not describe nor suggest at least one groove in the bottom surface of the flat plate, with each groove sized to engage one of the support beams where a portion of the beam is positioned in the groove.

Sodergard describes exchangeable control rod guide tubes for a nuclear reactor. The guide tubes are supported by the bottom of the reactor pressure vessel and carry square support blocks at the upper end of the guide tubes. The support blocks are arranged in an edge to edge



relationship to form an even bottom for the reactor core. Sodergard does not describe nor suggest support beams coupled to a core shroud, nor that the support blocks include at least one groove in the bottom surface, with each groove sized to engage a support beams where a portion of the beam is positioned in the groove. Further, Applicants submit that, in contrast to the suggestion at page 22 of the Office Action, Figure 3 of Sodergard does not illustrate a groove on the bottom surface of block 8. In fact none of Figures 1-7 of Sodergard illustrate a groove on the bottom surface of block 8.

Naka et al. is non analogous art that describes a double flooring structure that is used in a floor of a computer room. The teachings of Naka et al. have no applicability or use inside a nuclear reactor pressure vessel and it would not be obvious to one skilled in the art to combine the teachings of Naka et al. with the teachings of Challberg and Sodergard. Further, Naka et al. do not describe nor suggest a removable support plate that includes at least one groove in the bottom surface, with each groove sized to engage a support beams where a portion of the beam is positioned in the groove. Rather, Naka et al. describe a floor panel that includes a lip (step portion 14f) around the edge of the floor panel. Applicants submit that the lip described in Naka et al. is not a groove in the bottom surface of the floor panel.

Challberg, Sodergard, and Naka et al., alone or in combination, do not describe nor suggest a nuclear reactor core support apparatus for supporting fuel assemblies in a reactor pressure vessel as recited in Claim 1 or a nuclear reactor as recited in Claim 13. Particularly, Challberg, Sodergard, and Naka et al., alone or in combination, do not describe nor suggest an apparatus having a plurality of removable support plates with each support plate including at least one groove in the bottom surface, with each groove sized to engage one of the support

beams where a portion of the beam is positioned in the groove and the removable support plate is in direct contact with the beam. Rather, Challberg describes only one core plate, and Challberg does not describe nor suggest a removable support plate that includes at least one groove in the bottom surface, with each groove sized to engage one of the support beams where at least a portion of the beam is positioned in the groove. The core plate of Challberg does not include any grooves. The Office Action, at page 21, has admitted that "Challberg does not specifically disclose that the support plate is made up of a plurality of sub plates". Further, Sodergard describes support blocks that are arranged in an edge to edge relationship to form an even bottom for the reactor core and that are positioned on the upper end of the guide tubes. Sodergard does not describe nor suggest that the support blocks include at least one groove in the bottom surface, with each groove sized to engage a support beams where a portion of a beam is positioned in the groove. Rather, Sodergard describes that the support blocks a carried by the upper portion of the guide tubes. Specifically, Sodergard teaches a fuel support apparatus that does not include support beams. Modifying the teachings of Challberg with the teachings of Sodergard does not produce an apparatus having a plurality of removable support plates with each support plate including at least one groove in the bottom surface, with each groove sized to engage one of the support beams where a portion of the beam is positioned in the groove and the removable support plate is in direct contact with the beam because neither Challberg or Sodergard teaches a removable support plate with at least one groove in the bottom surface. Applicants disagree with the assertion that it would be obvious to incorporate a groove because Figures 5, 6, and 10 of Challberg and Figures 5-7 of Sodergard show the use of grooves as a means of securing or aligning various components. Applicants submit that Figures 5, 6, and 10 do not show the use of

grooves as a means of securing or aligning various components. Figures 5-7 of Sodergard show a seal ring 15 positioned inside a groove 14 of the guide tube. Applicants submit that there is no suggestion or motivation in Challberg or Sodergard to use slots located in the bottom surface of a removable support plate that are sized to receive a portion of the support beams. Particularly, Challberg does not teach the use of slots and Sodergard teaches away from the use of support beams so that "it is possible, without dismantling the entire core bottom for the repair of a guide tube, to take this tube out of the nuclear reactor with its support block".

Further, Naka et al. do not describe nor suggest a removable support plate that includes at least one groove in the bottom surface, with each groove sized to engage a support beams where a portion of the beam is positioned in the groove. Rather, Naka et al. describe a floor panel that includes a lip (step portion 14f) around the edge of the floor panel. Applicants submit that the lip described in Naka et al. is not a groove in the bottom surface of the floor panel. Further, it would not be obvious to combine the teachings of Naka et al. with the teachings of Challberg and/or Sodergard because Naka et al. is non analogous art that describes a double flooring structure that is used in a floor of a computer room. The teachings of Naka et al. have no applicability or use inside a nuclear reactor pressure vessel. Therefore, it would not be obvious to one skilled in the art to combine the teachings of Naka et al. with the teachings of Challberg and/or Sodergard.

Furthermore, Applicants submit that it would not obvious to combine the teachings of Sodergard with the teachings of Challberg because Challberg already includes a plurality of fuel bundle supports positioned on and extending through the flat core plate. The fuel bundle supports include coolant flow channels that are designed to provide uniform coolant flow through the fuel bundle even if the fuel bundle coolant flow inlet is aligned with a support beam.

By replacing the core plate of Challberg with the support blocks of Sodergard would also remove the support beams because the Sodergard support blocks mount directly onto the guide tubes and there is no need for support beams. This arrangement would destroy the need for the Challberg fuel bundle supports which are the novel feature of the Challberg invention. Destroying the inventive purpose of the Challberg invention by incorporating the teachings of Sodergard would make the combination nonobvious.

At least for the reasons explained above, Applicants submit that Claims 1 and 13 are patentable over Challberg, Sodergard, and Naka et al., alone or in combination.

Claim 5 has been canceled.

Claims 2-4, 6-8, and 10-11 depend from independent Claim 1 and Claim 15-18 depend from independent Claim 13. When the recitations of Claims 2-4, 6-8, and 10-11, and Claims 15-18 are considered in combination with the recitations of Claims 1 and 13 respectively, Applicants respectfully submit that dependent Claims 2-4, 6-8, 10-11, and 15-18 likewise are patentable over Challberg and Sodergard, alone or in combination.

For the reasons set forth above, Applicants respectfully request that the Section 103(a) rejection of Claims 1-8, 10, 11, 13 and 15-18 be withdrawn.

The rejection of Claims 19 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Challberg (U.S. Patent No. 6,813,327) in view of Sodergard (U.S. Patent No. 3,650,895), and further in view of Naka et al. (U.S. Patent No. 4,922,670), and still further in view of Dalke et al. (U.S. Patent No. 5,519,746) is respectfully traversed.

As explained above, Challberg, Sodergard, and Naka et al., alone or in combination, do not describe nor suggest a nuclear reactor as recited in Claim 13. Particularly, Challberg,

Sodergard, and Naka et al., alone or in combination, do not describe nor suggest a plurality of removable support plates where each removable support plate includes at least one groove in the bottom surface, with each groove sized to engage one of the support beams where at least a portion of the beam is positioned in the groove.

Dalke et al. is cited for teaching an inter-bundle support plate 140. Dalke et al. is not cited for and do not teach a plurality of removable support plates where each removable support plate includes at least one groove in the bottom surface, with each groove sized to engage one of the support beams where at least a portion of the beam is positioned in the groove. As explained above, Challberg, Sodergard, and Naka et al., alone or in combination, do not describe nor suggest such a structure.

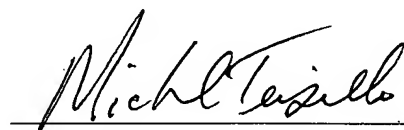
Challberg, Sodergard, Naka et al., and Dalke et al., alone or in combination, do not describe nor suggest a nuclear reactor as recited in Claim 13. Particularly, Challberg, Sodergard, Naka et al., and Dalke et al., alone or in combination, do not describe nor suggest a plurality of removable support plates where each removable support plate includes at least one groove in the bottom surface, with each groove sized to engage one of the support beams where at least a portion of the beam is positioned in the groove. Accordingly, Applicants submit that independent Claim 13 is patentable over Challberg, Sodergard, Naka et al., and Dalke et al., alone or in combination.

Claims 19 and 20 depend from independent Claim 13. When the recitations of Claims 19 and 20 are considered in combination with the recitations of Claim 13, Applicants respectfully submit that dependent Claims 19 and 20 likewise are patentable over Challberg, Sodergard, Naka et al., and Dalke et al., alone or in combination.

For the reasons set forth above, Applicants respectfully request that the Section 103(a) rejection of Claims 19 and 20 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Favorable action is respectfully solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael Tersillo", written over a horizontal line.

Michael Tersillo  
Registration No. 42,180  
ARMSTRONG TEASDALE LLP  
One Metropolitan Square, Suite 2600  
St. Louis, Missouri 63102-2740  
(314) 621-5070



3/5

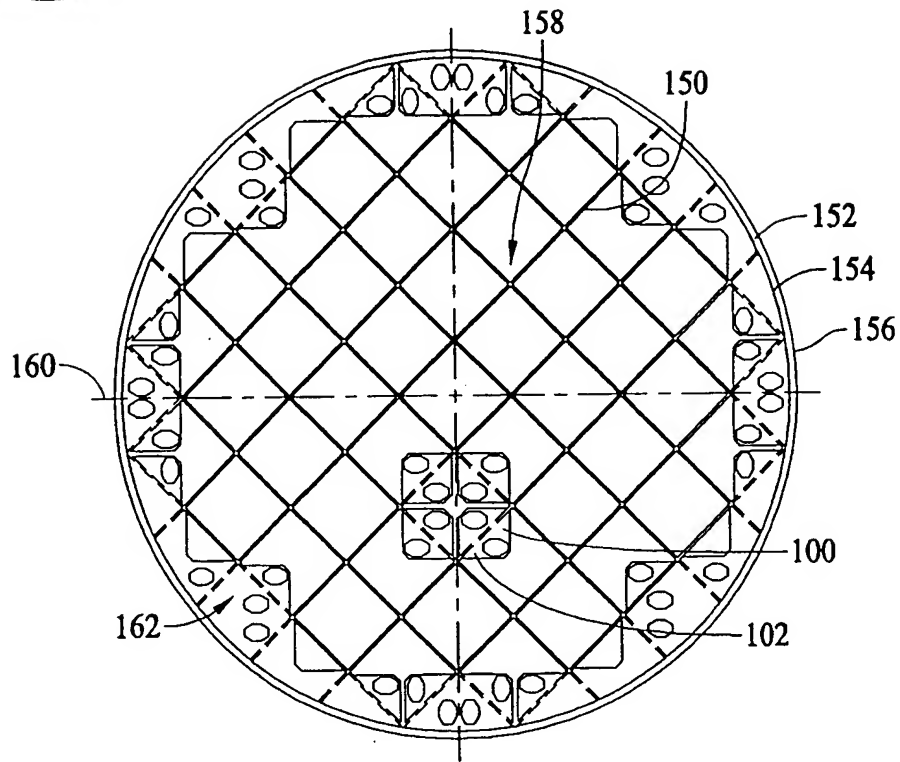


FIG. 4

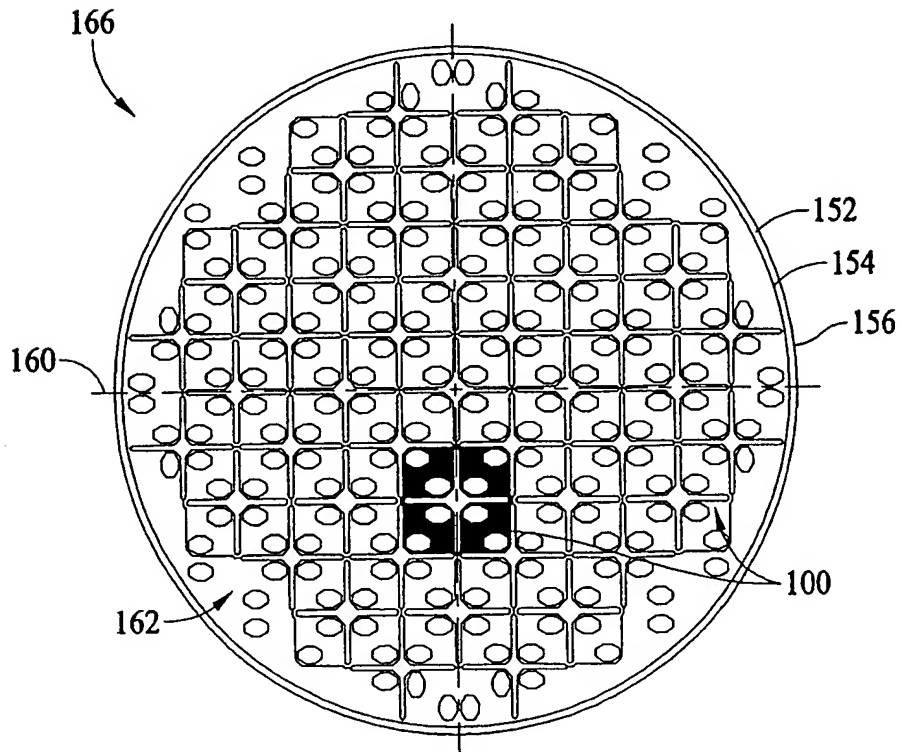


FIG. 5

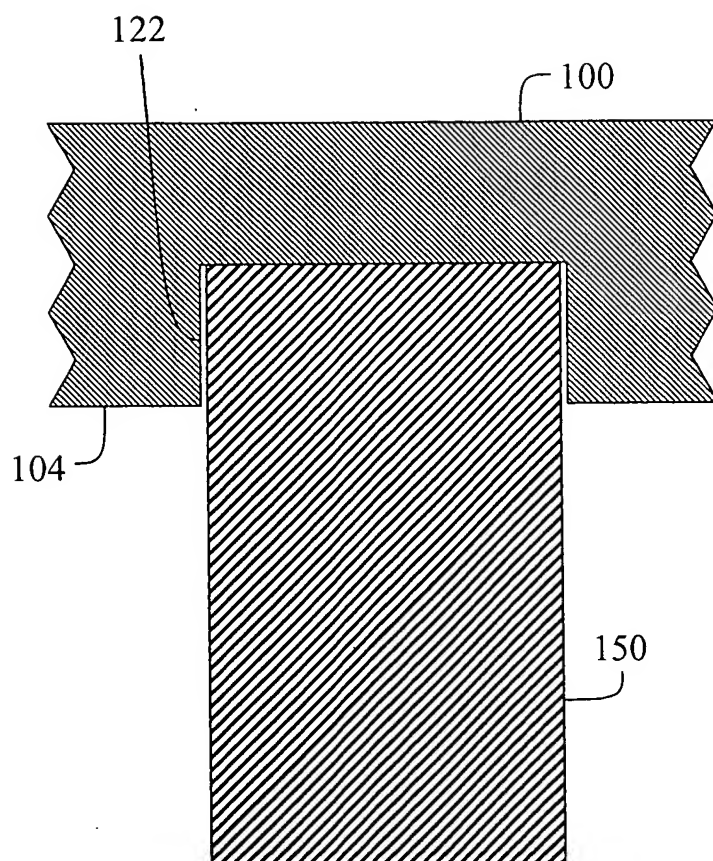


FIG. 8





# United States Patent and Trademark Office

Home | Site Index | Search | FAQ | Glossary | Guides | Contacts | eBusiness | eBiz Alerts | News | Help

Portal Home | Patents | Trademarks | Other

## Patent eBusiness

- ☐

Patent Application Information Retrieval

- ☐ Electronic Filing
- ☐ Patent Application Information (PAIR)
- ☐ Patent Ownership
- ☐ Fees
- ☐ Supplemental Resources & Support

Select Search Method: Enter Number:

Application Number

**SUBMIT**

Order Certified Application As Filed  
Order Certified File Wrapper  
View Order List

## Patent Information

- Patent Guidance and General Info
- ☐ Codes, Rules & Manuals
- ☐ Employee & Office Directories
- ☐ Resources & Public Notices

10/661,847 Modular reactor containment system

Application Data Transaction History Image File Wrapper Published Documents Publication Dates Address & Attorney/Agent

## Patent Searches

- Patent Official Gazette
- ☐ Search Patents & Applications
- ☐ Search Biological Sequences
- ☐ Copies, Products & Services

## Other

- Copyrights
- Trademarks
- Policy & Law
- Reports

This application is officially maintained in electronic form. To View: Click the desired Document Description. To Download: Print: Check the desired document(s) and click StartDownload.

Mail Room Date	Document Description	Page Count	Select All	Start Download
11-06-2006	Abandonment	2	<input type="checkbox"/>	<input type="checkbox"/>
10-27-2006	Amendment Submitted/Entered with Filing of CPA/RCE	1	<input type="checkbox"/>	<input type="checkbox"/>
10-27-2006	Specification	1	<input type="checkbox"/>	<input type="checkbox"/>
10-27-2006	Claims	4	<input type="checkbox"/>	<input type="checkbox"/>
10-27-2006	Applicant Arguments/Remarks Made in an Amendment	17	<input type="checkbox"/>	<input type="checkbox"/>
10-27-2006	Drawings	2	<input type="checkbox"/>	<input type="checkbox"/>
10-27-2006	Request for Continued Examination (RCE)	1	<input type="checkbox"/>	<input type="checkbox"/>
10-27-2006	Extension of Time	3	<input type="checkbox"/>	<input type="checkbox"/>
04-27-2006	Final Rejection	32	<input type="checkbox"/>	<input type="checkbox"/>

04-27-2006	List of references cited by examiner	1	<input type="checkbox"/>
04-27-2006	Index of Claims	1	<input type="checkbox"/>
04-27-2006	Search information including classification, databases and other search related notes	1	<input type="checkbox"/>
04-25-2006	Examiner's search strategy and results	10	<input type="checkbox"/>
02-01-2006	Fee Worksheet (PTO-875)	1	<input type="checkbox"/>
02-01-2006	Amendment - After Non-Final Rejection	1	<input type="checkbox"/>
02-01-2006	Specification	1	<input type="checkbox"/>
02-01-2006	Claims	4	<input type="checkbox"/>
02-01-2006	Applicant Arguments/Remarks Made in an Amendment	15	<input type="checkbox"/>
02-01-2006	Drawings	2	<input type="checkbox"/>
02-01-2006	Transmittal to TC	3	<input type="checkbox"/>
09-01-2005	Non-Final Rejection	22	<input type="checkbox"/>
09-01-2005	List of references cited by examiner	1	<input type="checkbox"/>
09-01-2005	NPL Documents	2	<input type="checkbox"/>
09-01-2005	NPL Documents	4	<input type="checkbox"/>
09-01-2005	Index of Claims	1	<input type="checkbox"/>
09-01-2005	Search information including classification, databases and other search related notes	1	<input type="checkbox"/>
08-29-2005	Examiner's search strategy and results	7	<input type="checkbox"/>
06-17-2005	Fee Worksheet (PTO-875)	1	<input type="checkbox"/>
06-17-2005	Amendment - After Non-Final Rejection	4	<input type="checkbox"/>
06-17-2005	Claims	4	<input type="checkbox"/>
	Applicant Arguments/Remarks Made in an		

06-17-2005	Amendment	1	<input type="checkbox"/>
05-18-2005	Requirement for Restriction/Election	4	<input type="checkbox"/>
05-18-2005	Index of Claims	1	<input type="checkbox"/>
03-21-2005	Fee Worksheet (PTO-875)	1	<input type="checkbox"/>
03-21-2005	Amendment After Final	1	<input type="checkbox"/>
03-21-2005	Claims	4	<input type="checkbox"/>
03-21-2005	Applicant Arguments/Remarks Made in an Amendment	11	<input type="checkbox"/>
03-21-2005	Request for Continued Examination (RCE)	1	<input type="checkbox"/>
03-21-2005	Miscellaneous Incoming Letter	3	<input type="checkbox"/>
03-03-2005	Advisory Action (PTOL-303)	2	<input type="checkbox"/>
02-28-2005	Fee Worksheet (PTO-875)	1	<input type="checkbox"/>
02-18-2005	Amendment After Final	4	<input type="checkbox"/>
02-18-2005	Authorization for Extension of Time all replies	4	<input type="checkbox"/>
02-18-2005	Specification	1	<input type="checkbox"/>
02-18-2005	Claims	4	<input type="checkbox"/>
02-18-2005	Applicant Arguments/Remarks Made in an Amendment	11	<input type="checkbox"/>
12-23-2004	Final Rejection	18	<input type="checkbox"/>
12-23-2004	List of references cited by examiner	1	<input type="checkbox"/>
12-23-2004	Search information including classification, databases and other search related notes	1	<input type="checkbox"/>
12-23-2004	Index of Claims	1	<input type="checkbox"/>
12-10-2004	Examiner's search strategy and results	4	<input type="checkbox"/>

11-16-2004	Fee Worksheet (PTO-875)	1	<input type="checkbox"/>
11-16-2004	Amendment - After Non-Final Rejection	4	<input type="checkbox"/>
11-16-2004	Specification	2	<input type="checkbox"/>
11-16-2004	Claims	4	<input type="checkbox"/>
11-16-2004	Applicant Arguments/Remarks Made in an Amendment	13	<input type="checkbox"/>
11-16-2004	Drawings	2	<input type="checkbox"/>
09-16-2004	Non-Final Rejection	14	<input type="checkbox"/>
09-16-2004	List of references cited by examiner	1	<input type="checkbox"/>
09-16-2004	Foreign Reference	9	<input type="checkbox"/>
09-16-2004	Foreign Reference	12	<input type="checkbox"/>
09-16-2004	Foreign Reference	12	<input type="checkbox"/>
09-16-2004	List of References cited by applicant and considered by examiner	1	<input type="checkbox"/>
09-16-2004	Index of Claims	1	<input type="checkbox"/>
09-16-2004	Bibliographic Data Sheet	1	<input type="checkbox"/>
09-16-2004	Search information including classification, databases and other search related notes	1	<input type="checkbox"/>
09-10-2004	Examiner's search strategy and results	2	<input type="checkbox"/>
06-04-2004	Any document coming from L&R	1	<input type="checkbox"/>
05-12-2004	Any request going to L R	5	<input type="checkbox"/>
04-19-2004	Any document coming from L&R	2	<input type="checkbox"/>
04-15-2004	Any document coming from L&R	1	<input type="checkbox"/>
09-12-2003	Transmittal of New Application	2	<input type="checkbox"/>

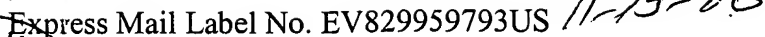
09-12-2003	Specification	8	<input type="checkbox"/>
09-12-2003	Claims	4	<input type="checkbox"/>
09-12-2003	Abstract	1	<input type="checkbox"/>
09-12-2003	Drawings	5	<input type="checkbox"/>
09-12-2003	Oath or Declaration filed	2	<input type="checkbox"/>
09-12-2003	Information Disclosure Statement (IDS) Filed	1	<input type="checkbox"/>
09-12-2003	Fee Worksheet (PTO-875)	1	<input type="checkbox"/>
09-12-2003	Fee Worksheet (PTO-875)	1	<input type="checkbox"/>

*If you need help:*

- *Call the Patent Electronic Business Center at (866) 217-9197 (toll free) or e-mail [EBC@uspto.gov](mailto:EBC@uspto.gov) for specific information about Patent Application Information Retrieval (PAIR).*
- *Send general questions about USPTO programs to the USPTO Contact Center (UCC).*
- *If you experience technical difficulties or problems with this application, please report them via e-mail to [ElectronicBusinessSupport@uspto.gov](mailto:ElectronicBusinessSupport@uspto.gov) or call 1 800-786-9199.*

---

[Home](#) | 
 [Site Index](#) | 
 [Search](#) | 
 [eBusiness](#) | 
 [Help](#) | 
 [Privacy Policy](#)



Attorney Docket No.: 24-AT-135243

Applicant: Boardman et al.

:  
: Art Unit: 3694

Serial No.: 10/661,847

: Examiner: D. L. Greene

Filed: September 12, 2003

For: MODULAR REACTOR  
CONTAINMENT SYSTEM


**Mail Stop: Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450**

1. Transmitted herewith is:  
Petition For Withdrawal Of Holding Of Abandonment (2 pgs.), in response to  
Office Action dated November 6, 2006, along with copies of the documents filed  
on October 27, 2006, including Request For Continued Examination (RCE)  
Transmittal, Amendment After Final Office Action, Return Stamped Post Card  
and Print-Out of Public PAIR Image File History  
Transmittal Form (3 pgs.), in duplicate  
Return Post Card

2. Applicant ☐ Claims small entity status.  
☒ is other than a small entity.

**Express Mail No. EV829959793US**  
**Date: November 13, 2006**

I hereby certify that the documents listed above are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated above in an envelope addressed to Mail Stop: Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

  
Michael Tersillo, Reg. No. 42,180

### EXTENSION OF TERM

3. The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136 apply.

(complete (a) or (b), as applicable)

- (a) \_\_\_\_\_ Applicant petitions for an extension of time under 37 C.F.R. 1.136  
(Fees: 37 C.F.R. 1.17(a)-(d) for the total number of months checked below:)

Extension for response within:	Other than small entity Fee	Small entity Fee (if applicable)
_____ first month	\$ 120.00	\$ 60.00
_____ second month	\$ 450.00	\$ 225.00
_____ third month	\$ 1,020.00	\$ 510.00
_____ fourth month	\$1,590.00	\$ 795.00
_____ fifth month	\$2,160.00	\$1,080.00

Fee: \$ \_\_\_\_\_

If an additional extension of time is required, please consider this a petition therefor.

*(Check and complete the next item, if applicable)*

\_\_\_\_\_ An extension of \_\_\_\_\_ months has already been secured. The fee paid therefor \$\_\_\_\_\_ is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request \$\_\_\_\_\_

OR

- (b)   X   Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

## FEE FOR CLAIMS

4. The fee for claims (37 C.F.R. 1.16(b)-(d)) has been calculated as shown below:

	(Col. 1)		(Col. 2)	(Col. 3)	SMALL ENTITY		OTHER THAN SMALL ENTITY
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR	PRESENT EXTRA	ADDITIONAL RATE FEE	OR	ADDITIONAL RATE FEE
TOTAL INDEP.		MINUS		=	x \$25.00 = \$		x \$50.00 = \$
		MINUS		=	x \$100.00 = \$		x \$200.00 = \$
— FIRST PRESENTATION OF MULTIPLE DEP. CLAIM					+ \$180.00 = \$		+ \$360.00 = \$
					TOTAL ADDITIONAL FEE \$	OR	TOTAL ADDITIONAL FEE \$

- (a) ☒ No additional fee for Claims is required

**OR**

- (b) ☐ Total additional fee for claims required \$ \_\_\_\_\_

## FEE PAYMENT

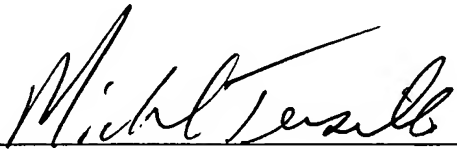
5. Attached is a check in the sum of \$ \_\_\_\_\_
- ☐ Charge Deposit Account No. 01-2384 the sum of \$ \_\_\_\_\_.  
A duplicate of this transmittal is attached.

## FEE DEFICIENCY

6. ☒ If any additional extension and/or fee is required, charge Deposit Account No. 01-2384.

**AND/OR**

- ☒ If any additional fee for claims is required, charge Deposit Account No. 01-2384.
7. ☐ Other:

  
 Michael Tersillo  
 Reg. No. 42,180  
 ARMSTRONG TEASDALE LLP  
 One Metropolitan Square, Suite 2600  
 St. Louis, MO 63102  
 314-621-5070